Volunteer Lake Assessment Program Individual Lake Reports

WINNEPOCKET, LAKE, WEBSTER, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	1,728	**Max. Depth (m):**	20.4	**Flushing Rate (yr^{1})**	0.6
Surface Area (Ac.):	227	**Mean Depth (m):**	5.8	**P Retention Coef:**	0.73
Shore Length (m):	5,000	**Volume (m^3):**	5,315,500	**Elevation (ft):**	452

TROPHIC CLASSIFICATION

Year	Trophic class
1982	OLIGOTROPHIC
1998	OLIGOTROPHIC

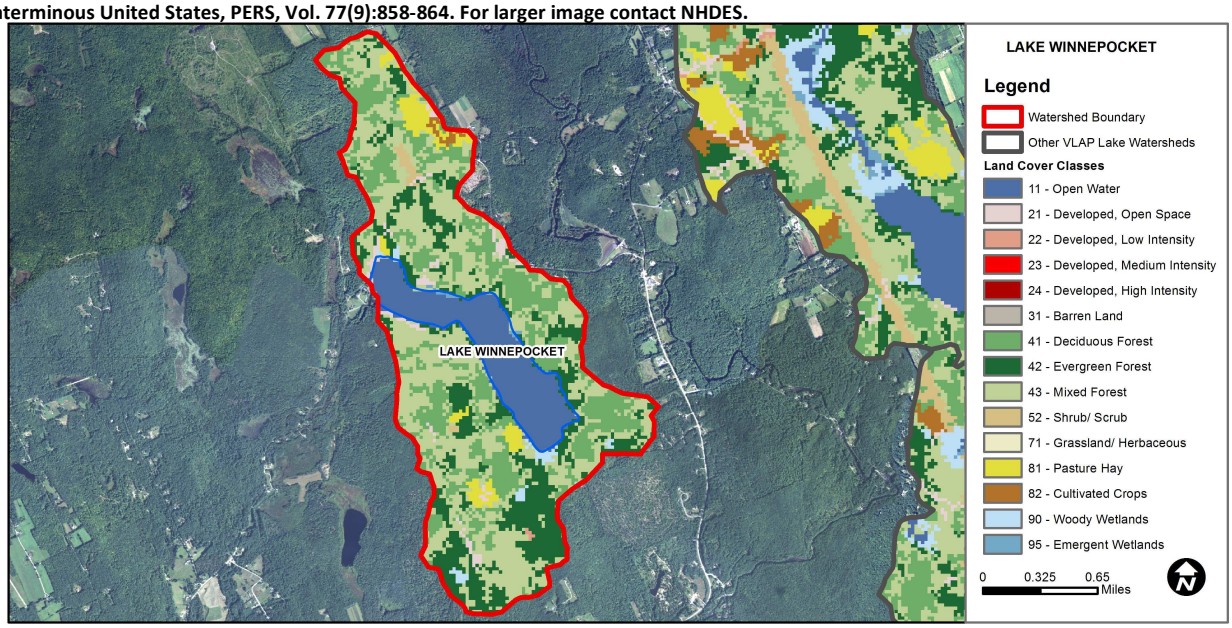
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	13.1	Barren Land	0	Grassland/Herbaceous	0.01
Developed-Open Space	1.82	Deciduous Forest	22.29	Pasture Hay	3.36
Developed-Low Intensity	0.09	Evergreen Forest	19.05	Cultivated Crops	0.38
Developed-Medium Intensity	0	Mixed Forest	37.97	Woody Wetlands	0.97
Developed-High Intensity	0	Shrub-Scrub	0.65	Emergent Wetlands	0.22

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
WINNEPOCKET LAKE, WEBSTER, NH
2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphic)*

- **CHLOROPHYLL-A:** Chlorophyll levels were low and below the NH lake median. Historical trend analysis indicates chlorophyll levels tend to fluctuate from year to year.
- **CONDUCTIVITY/CHLORIDE:** Conductivity and chloride were low at each station and approximately equal to the NH lake medians.
- **E. COLI:** E. coli levels were low at each station and well below the state standards for public beaches and surface waters.
- **TOTAL PHOSPHORUS:** Epilimnetic (upper water layer) and metalimnetic (middle water layer) phosphorus levels were low and well below the NH lake median. Historical trend analysis indicates epilimnetic phosphorus tends to fluctuate from year to year. Hypolimnetic (lower water layer) phosphorus levels decreased from July to August and were average. Baston Pt. and Boxlet Inlet phosphorus were slightly elevated on the June sampling event following a significant rain event.
- **TRANSPARENCY:** Transparency improved from 2011 and was much greater than the NH lake median. Historical trend analysis indicates a relatively stable transparency since monitoring began.
- **TURBIDITY:** Turbidity was elevated in Boxlet Inlet which likely contributed to the elevated phosphorus levels. Hypolimnetic turbidity was slightly elevated in August.
- **PH:** pH decreases to undesirable levels in the hypolimnion.
- **RECOMMENDED ACTIONS:** Boxlet Inlet and Baston Pt. phosphorus levels increased following a significant rain event. Identify potential sources of increased phosphorus such as fertilizer use, septic systems or agricultural impacts. Educate watershed residents on ways to reduce stormwater runoff from their properties utilizing DES' "NH Homeowner's Guide to Stormwater Management". Keep up the great work!

Table 1. 2012 Average Water Quality Data for LAKE WINNEPOCKET

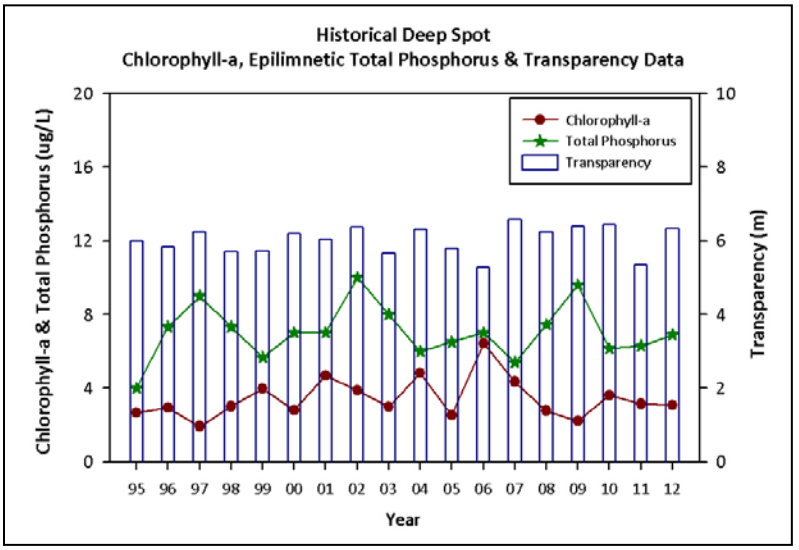
Station Name	Alk.	Chlor-a	Chloride	Cond.	E. Coli	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	#/100ml	ug/l	m		ntu	
							NVS	VS		
Agoos Shore					10					
Baston Pt				43.2	10	10			0.50	6.97
Boxlet Inlet			3	63.3	10	28			3.15	7.02
Dawe Point			4	43.4	10	5			0.43	6.99
Deep Epilimnion	7.25	3.07		42.5		7	6.33	6.30	0.61	6.89
Deep Metalimnion				42.2		5			0.51	6.93
Deep Hypolimnion				44.8		15			1.37	6.26
Outlet				43.2	10	6			0.69	6.91
West End Beach				43.0	2	4			0.54	6.99
West Wind Village			4	42.3	10	6			0.50	7.01

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Transparency	Stable	Data not significantly increasing or decreasing.
Phosphorus (epilimnion)	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.



This report was generated by the NH DES Volunteer Lake Assessment Program (VLAP). For more information contact:
Sara Steiner
PO Box 95
Concord, NH 03302-0095
(603) 271-2658
sara.steiner@des.nh.gov